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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/648,523	08/26/2003	Dong-Hoon Kim	21C-0065	4676
23413 7590 02/11/2008 CANTOR COLBURN, LLP 20 Church Street 22nd Floor Hartford, CT 06103				
EXAMINER NEGRON, ISMAEL				
ART UNIT 2885		PAPER NUMBER		
MAIL DATE 02/11/2008		DELIVERY MODE PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/648,523

Applicant(s)

KIM ET AL.

Examiner

ISMAEL NEGRON

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Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 4-6, 9-62 and 73 is/are pending in the application.
- 4a) Of the above claim(s) 22-57 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1, 4-6 and 9-21 is/are allowed.
- 6) ☒ Claim(s) 58-62 and 73 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/808)
- Paper No(s)/Mail Date 8/08/2007.
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's amendment filed on December 17, 2007 has been entered. Claim 58 has been amended. No claim has been cancelled, or added. Claims 1, 4-6, 9-21, 58-62 and 73 are still pending in this application, with claims 1, 22, 40, 46, 52, 58 and 73 being independent. Claims 22-57 have been withdrawn from consideration.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 58-62 and 73 is rejected under 35 U.S.C. 103(a) as being unpatentable over RYU et al. (U.S. Pat. Pub. No. 2002/0181223 A1) in view of ISHIKAWA et al. (U.S. Pat. 5,600,455).
3. RYU et al. discloses an light guide plate having:
 - **a light incident surface for receiving light from a light source (as recited in claims 58 and 73),** as seen in Figure 4;
 - **a first light emission surface (as recited in claims 58 and 73),** as seen in figures 6a-7b;

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- **a second light emission surface (as recited in claims 58 and 73), as seen in figures 6a-7b;**
- **the emission surfaces being for emitting light (as recited in claims 58 and 73), inherent, as light will always exit the surface at some angle;**
- **a plurality of protrusions formed on the first light emission surface (as recited in claims 58, 59 and 73), Figure 6a, reference number 21;**
- **the protrusion being circular cylinder-shaped (as recited in claims 58 and 73), as seen in Figure 6a;**
- **the plurality of protrusions being positioned with increasing density as a distance from the light incident surface increases (as recited in Claim 59), as seen in Figure 4;**
- **the size of the plurality of protrusions increasing as a distance from the light incident surface increases (as recited in Claim 60), as seen in Figure 4;**
- **the protrusion parts being formed integrally with the light incident surface increases (as recited in Claim 62), as evidenced by Figure 6a.**

4. RYU et al. further discloses the shape of the dots (triangular pyramid, cylinder, polyhedron, and the like), and its height/depth being determined by the particular requirements (e.g. brightness level, brightness uniformity, scattering angle, etc.) of a

specific application (e.g. paragraphs 42 and 43). RYU et al. even further discloses altering the shape, density, distribution, position, arrangement to increase luminance and obtain a uniform luminance distribution (e.g. paragraph 32).

5. RYU et al. discloses all the limitations of the claims, except the protrusion having grooves (as recited in claims 58 and 73), or the plurality of protrusions having substantially identical size being positioned with increasing density as a distance from the light incident surface increases (as recited in Claim 61).

6. ISHIKAWA et al. discloses an illumination device having:

- **a light source**, Figure 10, reference number 5;
- **a light guide plate (as recited in Claim 73)**, Figure 10, reference number 6;
- **the light guide plate having a light incident surface for receiving light from the light source (as recited in Claim 73)**, as seen in Figure 10;
- **a transparent member**, Figure 7, reference number 1;
- **the transparent member having a plurality of prisms**, Figure 7, reference number 10;
- **the prisms having grooves**, Figure 7, reference number 11.

7. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the microgrooves ISHIKAWA et al. as the geometrically regular pattern of the patented structure of RYU et al. (as recited in claims 58 and 73),

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to achieve a desired brightness and uniformity of the emitted light, as per the teachings of RYU et al. and ISHIKAWA et al. In addition, increasing the density of the plurality of protrusions by maintaining the size constant, but increasing the number protrusions by unit area as a distance from the light incident surface increases (as recited in Claim 59) would have flown naturally to one of ordinary skill in the art at the time the invention was made to achieve a desire/required luminance and/or luminance distribution uniformity, as per the teachings of both RYU et al. and ISHIKAWA et al.

Allowable Subject Matter

8. Claims 1, 4-6 and 9-21 are allowed.
9. The following is a statement of reasons for the indication of allowable subject matter:

Applicant teaches a light guide plate having a first and second light emission surfaces, and a light-reflecting pattern formed on the first emission surface. The pattern includes a plurality of dots for reflecting light from the first surface toward the second surface; such reflected light exiting the second surface at a greater angle than light emitted by the first surface. Each dot having light reflecting surfaces elongated in a selected direction, with adjacent light reflecting surfaces meeting each other at the elongated edges to form an angle between the adjacent reflecting surfaces.

No prior art was found teaching individually, or suggesting in combination, all of the features of the applicants' invention, specifically the dots having elongated light

reflecting surfaces, with adjacent light reflecting surfaces meeting each other at the elongated edges to form an angle between the adjacent reflecting surfaces.

Response to Arguments

10. Applicant's arguments filed December 17, 2007 have been fully considered but they are not persuasive.

11. Regarding the Examiner's rejection of Claim 58 under 35 U.S.C. 103(a) as being unpatentable over RYU et al. (U.S. Pat. Pub. No. 2002/0181223 A1) in view of ISHIKAWA et al. (U.S. Pat. 5,600,455), the applicant argues that the cited references fail to individually disclose, or even suggest in combination, all the features of the claimed invention, specifically a protrusion part formed as a column shape. The applicant further argues that the cells of RYU et al. are merely abstract boundary lines surrounding a plurality of micro cells, and, as such, the cells do not protrude from the light emission surface. The applicant even further argues that the micro cells do not constitute a protrusion part formed in a column shape as each micro cell forms a cone shape.

12. In response to applicant's arguments that RYU et al. and ISHIKAWA et al. failed to disclose individually, or even suggest in combination, a protrusion part formed as a column shape, the applicant is respectfully advised that while the claims of issued patents are interpreted in light of the specification, prosecution history, prior art and

other claims, this is not the mode of claim interpretation to be applied during examination. During examination, the claims must be interpreted as broadly as their terms reasonably allow. *In re American Academy of Science Tech Center*, 70 USPQ2d 1827 (Fed. Cir. May 13, 2004).

In this case, RYU et al. discloses a plurality of circularly shaped cells 21 formed on a light emission surface of a light guide plate 2, such cells 21 being formed by a plurality of micro cells 212 protruding from the surface of the light guide plate 2. The cells 21 were broadly considered to meet the "*a protrusion part formed as a column shape*" limitation as they are clearly circular and protrude from the surface of the light guide plate 2. Applicant's arguments regarding the cells 21 not protruding from the light emission surface fly in the face of fact, as clearly evidenced by Figure 6a of RYU et al. Cells 21 can not be simply characterized as "*abstract boundary lines surrounding a plurality of micro cells*" since such cell 21 is the group formed by the plurality micro cells 212, not merely their perimeter.

13. Regarding the Examiner's rejection of Claim 73 under 35 U.S.C. 103(a) as being unpatentable over RYU et al. (U.S. Pat. Pub. No. 2002/0181223 A1) in view of ISHIKAWA et al. (U.S. Pat. 5,600,455), the applicant argues that the cited references fail to individually disclose, or even suggest in combination, all the features of the claimed invention, specifically a plurality of cylinder shaped protrusions.

14. In response to applicant's arguments that RYU et al. and ISHIKAWA et al. failed to disclose individually, or even suggest in combination, a plurality of cylinder shaped protrusions, the applicant is once again respectfully advised that while the claims of issued patents are interpreted in light of the specification, prosecution history, prior art and other claims, this is not the mode of claim interpretation to be applied during examination. During examination, the claims must be interpreted as broadly as their terms reasonably allow. *In re American Academy of Science Tech Center*, 70 USPQ2d 1827 (Fed. Cir. May 13, 2004).

In this case, as discussed in previous section 12, the cells 21 were broadly considered to meet the "*circular cylinder shape*" limitation as they are clearly circular and protrude from the surface of the light guide plate 2. In addition, it is noted that the micro cells 212 are indeed cylindrically shaped (i.e. having the shape of a conical circular cylinder)

15. Regarding the Examiner's rejection of claims 59-62 under 35 U.S.C. 103(a) as being unpatentable over RYU et al. (U.S. Pat. Pub. No. 2002/0181223 A1) in view of ISHIKAWA et al. (U.S. Pat. 5,600,455), the applicant present no arguments, except stating that such claims depend directly or indirectly from independent claim 58 and would be allowable when/if the independent claim is allowed.

Conclusion

16. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

17. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ismael Negron whose telephone number is (571) 272-2376. The examiner can normally be reached on Monday-Friday from 9:00 A.M. to 6:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jong-Suk (James) Lee, can be reached on (571) 272-7044. The facsimile machine number for the Art Group is (571) 273-8300.

19. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status

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information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, go to <http://pair-direct.uspto.gov>. Should you have questions on access to Private PAIR system, contact the Electronic Business Center (EBC) toll-free at 866-217-9197.

/Ismael Negron/
Examiner
AU 2885